

Amendments to the Drawings:

The attached drawing sheet includes changes to Figure 2. In Figure 2, the reference labels 130 and 132 has been included for illustration purposes to indicate the grooves and pins and external casing.

REMARKS

Applicant respectfully requests reconsideration of this application in view of the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in substantially the same order in which the corresponding issues were raised in the Office Action.

Status of the Claims

Claims 1-4, and 6-12 are pending. Claims 1-4, and 6-12 are currently amended to more clearly define pre-existing claim limitations. Claim 5 is canceled. No claims are added. No new matter has been added.

Summary of the Office Action

Claims 1-12 stand objected to because of informalities.

Claims 1-12 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention.

Claims 1-9 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,993,150 to Liotta et al. (hereinafter "Liotta") in view of Applicant's Prior Art (hereinafter "APA").

Claims 10-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,993,150 to Liotta et al. (hereinafter "Liotta") in view of Applicant's Prior Art (hereinafter "APA").

Response to Objections

The drawings stand objected to because the drawings must show every feature of the invention specified in the claims. In particular, the Office Action states that external casing and the grooves and pins must be shown or the features canceled from the claims. Applicant respectfully submits that Figure 2 has been amended to include reference numbers for illustration purposes. Applicant respectfully requests that the objection to the drawings be withdrawn.

The specification stands objected to because it is replete with grammatical errors too numerous to mention in all instances. In particular, the Office Action states that the specification should be proofread for additional defects. Applicant respectfully submits that the specification has been amended to correct grammatical errors, as suggested by the Examiner. Applicant appreciates the Examiner's recommendation and respectfully requests that the objection to the specification be withdrawn.

Claim 11 stands objected to because of informalities. In particular, the Office Action states that "Claim 11, which recites that the first holes have an approximate diameter of 1.8 mm, has no antecedent basis in the specification for the underlined term." Applicant respectfully submits that the specification has been amended to include the term approximate, as suggested by the Examiner. Applicant appreciates the Examiner's recommendation and respectfully requests that the objection to claim 11 be withdrawn.

Response to Rejections under 35 U.S.C. § 103(a)

The Office Action rejected claims 1-9 and 12 under 35 U.S.C. § 103(a) as being unpatentable Liotta in view of APA. Applicant respectfully requests withdrawal of these rejections because the combination of cited references fails to teach or suggest all of the limitations of the claims.

CLAIMS 1-9, 11 AND 12

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Liotta in view of APA. Applicant respectfully submits that claim 1 is patentable over the combination of cited references because the combination does not teach or suggest all of the limitations of the claim. Claim 1, as amended, recites:

An assembly, comprising:

an internal casing and a support device for nozzles in a gas turbine stage, said nozzles being grouped together in sectors and each of said sectors being connected externally to an external casing of said gas turbine by means of said support device, said support device being kept in position by said internal casing, there also being formed first cooling holes on said internal casing and second cooling holes on said support device, wherein said first cooling holes of said internal casing have an extension substantially parallel to the axis of said gas turbine, **wherein said first holes are arranged circumferentially and are forty-two in number.** (Emphasis added).

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180, USPQ 580 (CCPA 1974). (Manual of Patent Examining Procedure (MPEP) ¶ 2143.03). Applicant respectfully submits that claim 1 requires that the first holes on the internal casing are arranged circumferentially and are forty-two in number. Nothing in Liotta discloses at least this limitation.

Liotta is directed to a turbine shroud having primary and secondary cooling circuits which accommodate differential gas pressure through the turbine. See Liotta, Abstract. The shroud support 34, which has been interpreted by the Examiner as an internal casing, includes primary distribution hole 38d disposed in flow communication with the primary plenums 38c for channeling the primary air 24a thereto. Although the Office action purports that the distribution hole 38d is parallel to the axis of the gas turbine, nothing in Liotta is directed to the number of distribution holes for the shroud support 34.

The Office action purports that the number of first cooling holes 38d is a result-effective variable, which directly influences the amount and rate of cooling fluid flow as well as the cooling effect on the support device 30, and that it would have been obvious to a person having ordinary skill to select the number of first cooling holes as forty-two for the purpose of optimizing the amount and rate of cooling fluid flow, as well as the cooling effect on the support devices. See Office action, mailed April 17, 2006, pages 7-8. The applicants, however, respectfully disagree with the characterization of the number of cooling holes as a result-effective variable according to MPEP 2144.05(II)(B).

Section 2144.05(II)(B) provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).” Furthermore, in order for the parameter to be recognized as a result-effective variable, *the prior art has to recognize the parameter*. See *Id.*, stating “the claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result- effective variable.)

In the Office action, mailed April 17, 2006, the Examiner has indicated that the number of cooling holes directly influences the amount and rate of cooling fluid flow as well as the cooling effect on the support devices. See Office action, mailed April 17, 2006, page 7. However, *nothing in the prior art reference itself* recognizes the number of holes directly influences the amount and rate of cooling fluid flow or the cooling effect on the support device. In fact, the major thrust of Liotta is directed to improving the cooling using two cooling air sources at different pressure and temperature. See Liotta, col. 6, line 66 to col. 7, line 1.

Moreover, the prior art reference teaches away from having forty-two holes on the internal casing because the configuration of two cooling air sources of Liotta "reduces the need for extracting cooling air from the compressor." See col. 7, lines 1-2. Assuming that the number of holes directly influences the amount and rate of cooling fluid flow, as well as the cooling effect on the support devices, as asserted by the Office action, the number of holes for a two cooling air source configuration would be smaller since this configuration reduces the need for extracting cooling air. See col. 7, lines 1-2.

For the reasons stated above, Liotta fails to disclose all of the limitations of the claim. Given that the cited references fails to disclose all of the limitations of the claim, Applicant respectfully submits that claim 1 is patentable over the cited references. Accordingly, Applicant requests that the rejection of claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Given that claims 2-9 and 11-12 depend from independent claim 1, which is patentable over the cited references, Applicant respectfully submits that dependent claims 2-9 and 11-12 are also patentable over the cited references. Accordingly, Applicant requests that the rejection of claims 2-9 and 11-12 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

It is respectfully submitted that in view of the amendments and remarks set forth herein, the rejections and objections have been overcome. If the Examiner believes a telephone interview would expedite the prosecution of this application, the Examiner is invited to contact Michael Mallie at (408) 720-8300.

If there are any additional charges, please charge them to Deposit Account No. 02-2666.

Respectfully submitted,

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